

Curriculum Vitae

Personal Data

Title	Prof. Dr.-Ing. (habil.)
First Name	Christoph Ewald
Name	Benzmüller
Current position	Full Professor (Univ.Prof, W3), U Bamberg, Chair of AI Systems Engineering; Adjunct Professor (apl.Prof.), FU Berlin, Faculty of Mathematics and Computer Science
Current institutions/sites, country	Since 02/22: University (U) of Bamberg (GER). Since 08/21: Adjunct (apl.) Prof., FU Berlin (GER). Since 10/20: Consultant/Scientific Advisor for AI, Freelancer
Identifiers/ORCID	0000-0002-3392-3093

Qualifications and Career

Stages	Periods and Details
Degree programme	10/89–04/95: Dipl.-Inform., Computer Science (CS), Saarland U, Germany
Doctorate	04/1995–07/1999: Saarland U (GER). Dissertation: “Equality and Extensionality in Higher-Order Theorem Proving”; supervisors: Prof. J. Siekmann, Prof. M. Kohlhase (now FAU Erlangen); mentors: Prof. P. Andrews, Prof. F. Pfenning (both CMU, Pittsburgh, USA)
Stages of academic/ professional career	2023–2024: Visiting Scholar (Guest Professor) , BITS Pilani, Dubai (UAE) 2020–2020: First UNA Europa chair, AI & CS & Maths, FU Berlin (GER) Since 2019: Freelance Industry Consultancy (e.g. IDNI AG, LI; Latentine GmbH, Berlin) 2018–2020: Guest Professor, AI & CS & Maths, FU Berlin (GER) 2017–2019: Visiting Scholar (Guest Professor), AI & CS, U Luxembourg (LUX) 2015–2016: Visiting Scholar (Guest Professor), Philosophy, Stanford U (USA) 2012–2017: DFG Heisenberg Fellow, AI & CS & Maths, FU Berlin (GER) Since 02/2012: Venia Legendi in Maths & CS, FU Berlin (GER) 2008–2011: Senior Researcher, Articulate Software (USA), DFG research grant(s) 2009–2010: 12 months parental leave (additional 3 months in 2011/12) 2008–2009: Full Professor, AI & CS, International U in Germany, Bruchsal (GER) 2006–2007: Senior Research Fellow, AI & CS, U Cambridge, (GBR) 07/2008 Habilitation: Venia Legendi in CS, Saarland University (GER) 2001-2008: Associate professor (Hochschuldozent C1 & C2), Saarland U (GER) 2000–2000: Postdoctoral Researcher, AI & CS, U Birmingham & U Edinburgh, (GBR) 1996–1997: Visiting Scholar, Maths, CMU (USA)

Engagement in the Research System

Organisation of Conferences (selection): Intl. Joint Conf. on Autom. Reason. (IJCAR 2024, co-chair), European Summer School in Logic, Language & Information (ESSLLI 2022, area co-chair), Intl. Conf. on Logic and Argumentation (CLAR 2021, co-chair), Conf. on Intell. Computer Mathematics (CICM 2020, co-chair), German Conf. on AI (KI 2019, co-chair), Luxemb. Logic for AI Summit (LuxLogAI 2018), Intl. Joint Conf. on Rules & Reason. (RuleML+RR 2018, co-chair), Global Conf. on AI (GCAI 2016, 2017, co-chair), Conf. on Autom. Deduct. (CADE 2015, organiser)

Commissions of Trust (selections): **Jury:** Dov Gabbay Prize (Luxembourg), Kurt Gödel Preis (Berlin); **Steering Committees:** CADE (vice president 2015-21), DEON, CICM, GI FB-KI, BMS, IFCoLoG, UITP; **Reviewer:** AvH-Stiftung, DFG, Austrian Science Fund, Johannes Kepler U, Cambridge U, Kings College, Czech Science Foundation, Nat. Sciences and Engin. Research Council of Canada, Recherche en sciences & technologies de l'informa-

tion; **Editorial board:** Mathematics in CS, Logic J. of the IGPL, J. of Applied Logics (IfCoLoG), Historia Logicae; **PC member (conferences):** IJCAR, ITP, IJCAI, ECAI, CLAR, ESSLLI, CADE, KI, DEON, FroCoS, KEOD, LNGAI, ICLP, GCAI, ODBASE, ICCSAMA, ICAART, FOIS, CICM, AISC, IFIP SEC, AIA, TPHOLs, TABLEAUX, LPAR, MKM, CALCULEMUS; **Reviewing for Journals:** Erkenntnis, J. Appl. Non Class. Logics, Stud. Log., Rev. Symb. Log., J. Autom. Reason., Synthese, Digital Society, Künstl. Intell., IEEE Trans. Artif. Intell., AI & Society, Sicherheit und Frieden, J. Philos. Log., J. Log. Comput., Australasian J. of Logic, Int. J. Softw. Inform., Trans. Large Scale Data Knowl. Centered Syst., Int. J. Softw. Informatics, Log. Univers., Fundam. Inform., Int. J. Semant. Web Inf. Syst., J. Web Semant., Log. Methods Comput. Sci., AI Commun., Ann. Math. Artif. Intell., ACM Trans. Comput. Log., LMS J. Comput. Math., J. Symb. Comput. **Own workshop series:** Autom. Reason. in Quantified Non-Classical Logics

Supervision of Doctorates in Computer Science, Maths and Philosophy (selection, last years, completed)

- 2020-2024: Veronika Solopova, Hybrid AI Systems in Automated Content Moderation and Analysis (*summa cum laude, computer science*, FU Berlin, supervisor); since 10/2023 PostDoc at TU Berlin, now junior group leader
- 2020-2024: Rosae Martin Peña, Ethical Decision-Making in Trustworthy Human-AI interaction: Linking Counterfactual Explanations and Regret (*philosophy*, U Valladolid, main supervisor); since 11/2023 DFKI Berlin
- 2018-2022: Daniel Kirchner, Computer-Verified Foundations of Metaphysics and an Ontology of Natural Numbers in Isabelle/HOL (*summa cum laude, mathematics*, FU Berlin, supervisor); lead developer of Solidity (Ethereum)
- 2015-2018: Alexander Steen, Extens. Paramod. for HO Logic and its Effective Implement. in Leo-III (*summa cum laude, computer science*, FU Berlin, supervisor); afterwards: GI Junior Fellow, Jun.Prof. U Greifswald
- 2016-2020: Ali Farjami, Discursive Input/Output Logic: Deontic Modals, and Computation (*computer science*, U Luxembourg, mentor/external co-supervisor); afterwards: PostDoc U Luxembourg
- I was supervisor, co-supervisor, committee member, mentor of ≥ 25 PhD and habilitation projects

Mentor of Researchers in Early Career Phases (selection) Dr. Dr. Andrea Vestrucchi (guest professor in my team at U Bamberg), Dr. Tarek Besold (habilitation process at U Bamberg), Dr. Daniel Kirchner (lead position at Ethereum Foundation & PostDoc in my team), Dr. Martin Aleksandrov (DFG own position 2021-2024 in my team at FU Berlin)

Scientific Results

Category A (peer-reviewed, chronological order, selection, last 5 years only)

1. **C. Benzmüller**, D. Fuenmayor, A. Steen, and G. Sutcliffe. “Who Finds the Short Proof?” In: *Logic Journal of the IGPL* 32.3 (2024), pp. 442–464. DOI: [10.1093/jigpal/jzac082](https://doi.org/10.1093/jigpal/jzac082)
2. X. Parent and **C. Benzmüller**. “Conditional Normative Reasoning as a Fragment of HOL”. in: *Journal of Applied Non-Classical Logics* (2024), pp. 1–32. DOI: [10.1080/11663081.2024.2386917](https://doi.org/10.1080/11663081.2024.2386917)
3. **C. Benzmüller**, D. Fuenmayor, and B. Lomfeld. “Modelling Value-oriented Legal Reasoning in LogiKEy”. In: *Logics* 2.1 (2024), pp. 31–78. DOI: [10.3390/logics2010003](https://doi.org/10.3390/logics2010003)
4. **C. Benzmüller**. “Symbolic AI and Gödel’s Ontological Argument”. In: *Zygon(r)* 57 (4 2022), pp. 953–962. DOI: [10.1111/zygo.12830](https://doi.org/10.1111/zygo.12830)
5. **C. Benzmüller** and S. Reiche. “Automating Public Announcement Logic with Relativized Common Knowledge as a Fragment of HOL in LogiKEy”. In: *Journal of Logic and Computation* 33.6 (2023), pp. 1243–1269. DOI: [10.1093/logcom/exac029](https://doi.org/10.1093/logcom/exac029)
6. **C. Benzmüller** and D. Fuenmayor. “Computer-supported Analysis of Positive Properties, Ultrafilters and Modal Collapse in Variants of Gödel’s Ontological Argument”. In: *Bulletin of the Section of Logic* 49.2 (2020), pp. 127–148. DOI: [10.18778/0138-0680.2020.08](https://doi.org/10.18778/0138-0680.2020.08)
7. **C. Benzmüller**, X. Parent, and L. van der Torre. “Designing Normative Theories for Ethical and Legal Reasoning: LogiKEy Framework, Methodology, and Tool Support”. In: *Artificial Intelligence* 287 (2020), p. 103348. DOI: [10.1016/j.artint.2020.103348](https://doi.org/10.1016/j.artint.2020.103348)

8. D. Kirchner, **C. Benzmüller**, and E. N. Zalta. “Mechanizing Principia Logico-Metaphysica in Functional Type Theory”. In: *Review of Symbolic Logic* 13.1 (2020), pp. 206–218. DOI: [10.1017/S1755020319000297](https://doi.org/10.1017/S1755020319000297)
9. **C. Benzmüller** and D. S. Scott. “Automating Free Logic in HOL, with an Experimental Application in Category Theory”. In: *Journal of Automated Reasoning* 64.1 (2020), pp. 53–72. DOI: [10.1007/s10817-018-09507-7](https://doi.org/10.1007/s10817-018-09507-7)
10. D. Kirchner, **C. Benzmüller**, and E. N. Zalta. “Computer Science and Metaphysics: A Cross-Fertilization”. In: *Open Philosophy* 2.1 (2019). Ed. by P. Grim, pp. 230–251. DOI: [10.1515/opphil-2019-0015](https://doi.org/10.1515/opphil-2019-0015)

Category B (others, chronological order)

1. (*AI Research Manifesto*) **C. Benzmüller** and B. Lomfeld. “Reasonable Machines: A Research Manifesto”. In: *KI 2020*. Springer, Cham, 2020. DOI: [10.1007/978-3-030-58285-2_20](https://doi.org/10.1007/978-3-030-58285-2_20)
2. (*AI Research Data; for more click [here](#)*) **C. Benzmüller** et al. “LogiKEy Workbench: Deontic Logics, Logic Combinations and Expressive Ethical and Legal Reasoning (Isabelle/HOL Dataset)”. In: *Data in Brief* 33.106409 (2020), pp. 1–10. DOI: [10.1016/j.dib.2020.106409](https://doi.org/10.1016/j.dib.2020.106409)
3. (*AI System Development*) V. Solopova, V. Herman, **C. Benzmüller**, and T. Landgraf. “Check News in One Click: NLP-Empowered Pro-Kremlin Propaganda Detection”. In: *EACL 2024 - System Demonstrations*. ACL, 2024
4. (*AI System Development*) V. Solopova et al. “PapagAI: Automated Feedback for Reflective Essays”. In: *KI 2023*. Springer, Cham, 2023, pp. 198–206. DOI: [10.1007/978-3-031-42608-7_16](https://doi.org/10.1007/978-3-031-42608-7_16)
5. (*AI System Development*) A. Steen and **C. Benzmüller**. “Extensional Higher-Order Paramodulation in Leo-III”. In: *Journal of Automated Reasoning* 65.6 (2021), pp. 775–807. DOI: [10.1007/s10817-021-09588-x](https://doi.org/10.1007/s10817-021-09588-x)
6. (*AI System Development*) **C. Benzmüller**, N. Sultana, L. C. Paulson, and F. Theiss. “The Higher-Order Prover LEO-II”. In: *Journal of Automated Reasoning* 55.4 (2015), pp. 389–404. DOI: [10.1007/s10817-015-9348-y](https://doi.org/10.1007/s10817-015-9348-y)
7. (*AI System Development*) S. Autexier, **C. Benzmüller**, D. Dietrich, and J. Siekmann. “OMEGA: Resource-Adaptive Processes in an Automated Reasoning Systems”. In: *Resource-Adaptive Cognitive Processes*. Cognitive Technologies. Springer, Berlin, Heidelberg, 2010, pp. 389–423. DOI: [10.1007/978-3-540-89408-7_17](https://doi.org/10.1007/978-3-540-89408-7_17)
8. (*AI System Development*) **C. Benzmüller**, M. Schiller, and J. Siekmann. “Resource-Bounded Modelling and Analysis of Human-Level Interactive Proofs”. In: *Resource-Adaptive Cognitive Processes*. Cognitive Technologies. Springer, Berlin, Heidelberg, 2010, pp. 291–311. DOI: [10.1007/978-3-540-89408-7_13](https://doi.org/10.1007/978-3-540-89408-7_13)

Academic Distinctions

Honors (selection)

- Invited member of Sigma Xi, The Scientific Research Honor Society, USA, since 2024
- High-end Foreign Expert (machine ethics in cross-cultural context), Zhejiang U, Huangzhou, China, since 2023
- Course representative & implementation: New BSc programme AI & Data Science at U Bamberg, since 2023
- Elected director Center for Innovative Applications of Applied Informatics, U Bamberg, since 2023
- Invited member, The Federation of German Scientists (VDW), since 2022
- National Contact Point CAIRNE (formerly CLAIRE), since 2019

Awards (selection)

- Best paper awards at CLAR 2023 and DEON 2018 conferences
- World champion in HO Automated Theorem Proving in 2019 (with LEO-III prover) and 2010 (with LEO-II prover)
- Central teaching award of FU Berlin for the lecture course *Computational Metaphysics*, 2016
- DFG Heisenberg Fellowship, 2012–2017
- PhD scholarship, Studienstiftung des Deutschen Volkes, 1996-1998

Invited Presentations (small selection)

- (*Invited event*) KI Insights: Experte Prof. Dr. C. Benzmüller über Ethik, Innovation und die globale Perspektive auf Künstliche Intelligenz, Jung und Alt bewegt, Vereinigung Deutscher Wissenschaftler (VDW), 2024
- (*Keynote*) Reasonable, Trusted AI through Symb. Ethico-legal Control & Reflection? FLAIRS 2023, USA

- (*Keynote*) Reasonable, trusted AI requires hybrid techniques, CINS 2023, Dubai, UAE
- (*Keynote*) Bridging Legal Argumentation and Automated Theorem Proving, Lawgorithm 2022, U São Paulo
- (*Plenary*) Ethico-legal governance of intelligent artificial agents – Can post-hoc normative reasoning competencies prevent AI systems from going rogue? ZJULogAI conference(s), Zhejiang U, Hangzhou, China, 2020
- (*Panelist*) Una Europa Talk, Resistance is futile, You will be digitalized! Berlin, Helsinki, Leuven, 2020
- (*Keynote*) Computational Metaphysics: New Insights on Gödel's Ontological Argument and Modal Collapse, Formal Methods and Science in Philosophy III, Dubrovnik, Croatia, 2019
- (*Keynote*) Human vs. Nonhuman – The Need for Ethical Intelligent Systems, Goethe-Institute São Paulo, 2019
- (*Keynote*) Experiments in Universal Logical Reasoning, SMT 2018, Oxford, UK
- (*Keynote*) A Flexible Infrastructure for Normative Reasoning, DEON 2018, Utrecht, The Netherlands
- (*Keynote*) What has the Mechanisation of Category Theory in Common with Proving God's Existence? 3. BMG Tag, Berliner Mathematische Gesellschaft e.V., Berlin, Germany, 2017
- Overall in CS/Maths/Phil: ≥ 18 keynotes at conferences & workshops; ≥ 100 invited presentations & tutorials

Invitations to Dagstuhl Seminars: 05431 (2005): "Deduction & Applications"; 10412: "QSTRLib: A Benchmark Probl. Repos. for Qualitative Spatial & Temp. Reason."; 15381: "Inform. from Deduction: Models and Proofs"; 16421: "Universality of Proofs"; 17371: "Deduction Beyond FO Logic"; 18171: "Normative Multi-Agent Systems"; 19171: "Ethics & Trust: Principles, Verification and Validation"; 21371: "Integrated Deduction"; 3151 (2023): "Normative Reasoning for AI"; 23371: "Roadmap for Responsible Robotics"; 23401: "Automated Mathematics: ..."

Memberships: Gesellschaft für Informatik, Deutscher Hochschulverband. Assoc. for Automated Reasoning, American Association for AI, DVMLG, Kurt Gödel Gesellschaft, Scandinavian Logic Society

Other Information

My research has attracted high media interest: TV productions TerraX (4 million viewers), Spiegel (online) magazine, newspapers such as Die Welt, FAZ, Tagesspiegel, etc. I have won several science slams, e.g. [FU Berlin Science Slam](#) as part of Wissensstadt Berlin event in 2021 and the [Science Slam of the U Bamberg](#) in 2022; however, my probably best science slam was in 2019: [#71 Science Slam Berlin](#) at the famous club "SO36" in Berlin-Kreuzberg. For more information on my publications, presentations and courses see: <http://christoph-benzmueller.de>

Data protection and consent to the processing of optional data

If you provide voluntary information (marked as optional) in this CV, your consent is required. Please confirm your consent by checking the box below.

[X] I expressly consent to the processing of the voluntary (optional) information, including "special categories of personal data" in connection with the DFG's review and decision-making process regarding my proposal. This also includes forwarding my data to the external reviewers, committee members and, where applicable, foreign partner organisations who are involved in the decision-making process. To the extent that these recipients are located in a third country (outside the European Economic Area), I additionally consent to them being granted access to my data for the above-mentioned purposes, even though a level of data protection comparable to EU law may not be guaranteed. For this reason, compliance with the data protection principles of EU law is not guaranteed in such cases. In this respect, there may be a violation of my fundamental rights and freedoms and resulting damages. This may make it more difficult for me to assert my rights under the General Data Protection Regulation (e.g. information, rectification, erasure, compensation) and, if necessary, to enforce these rights with the help of authorities or in court.

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I have taken note of the DFG's Data Protection Notice relating to research funding, which I can access at www.dfg.de/privacy_policy and I will forward it to such persons whose data the DFG processes as a result of being mentioned in this CV.